EDITORIAL ARTICLES.

RECENT CONTRIBUTIONS TO RECTAL SURGERY.

1. *B. Bardenheuer.* Die Resektion des Mastdarmes, Volkmann's klinische Vorträge. No. 298. (Resection of the Rectum).

3. *K. Schuchardt.* Ueber die tuberculose Mastdarmfistel. Volkmann's klinische Vorträge. No. 296. (On tuberculous fistula in ano).

3. *F. Esmarch.* Die Krankheiten des Mastdarmes und des Afters. Deutsche Chirurgie. Lieferung 48. (Diseases of the Rectum and Anus).

1. The great advances made of late years in the subject of rectal ailments and the enlargement of the field of operative interference are undoubtedly unprecedented in the history of these diseases. More especially, in the immediate past, the major operations on the rectum have been assiduously held forth by German surgeons, on the one hand, and have suffered severe attacks from France and England on the other. Even, if we somewhat doubt that these operations will ever enjoy a sphere of usefulness comparable to those of ovariotomy or hysterectomy, or more correctly, that a similar revolution of medical opinion in their favor, based upon similar achievements, will ever take place, as is the fond hope of Prof. Esmarch, we do not for a moment doubt that a general advance in the diagnosis, for instance, of malignant disease of the rectum and its early operative treatment will be fraught with perhaps less brilliant, but equally beneficial results to suffering humanity. The contributions we are about to review have assisted, and will furthermore assist in such progress, especially the work of Esmarch, from whose pen we always expect a happy combination of scientific treatment of the subject with eminently practical suggestions, in which expectations we are again not disappointed. Considering also the great practical value of Bardenheuer's clinical essay, a more extended review may not be unwelcome to our readers, more so as the first edition of Esmarch's work in Pitha-Billroth's Handbook has not been noticed in these pages heretofore.

Bardenheuer distinguishes between amputation, extirpation and resection of the rectum, the first two including the removal of the anal portion, the term extirpation being reserved for removal of the entire rectum with part of the colon. One of the principal objects of B.'s monograph is to enlarge the field of resection of the rectum, for which operation amputation has been too frequently performed. At the onset B. emphasizes that the reflection of the peritoneum in Douglas's pouch and the plica vesico-rectalis s. uterina forms no boundary line of these operations, and in proof of this he mentions that of 20 operations of this kind in his own practice in only one has the peritoneal cavity not been opened. The indications for resections of the rectum are:

1. *Recto-vaginal and rectal fistulæ*, which are amenable to no other surgical procedure; the size of the defect, the kinking of the rectum, the firm adhesions of the same to the pelvic wall by the cicatricial tissue around the fistula, the formation in such cases of a valve immediately above the seat of the fistula, are the pathological features that urge on us radical operative interference.

2. *Stricture of the Rectum.*—B. has operated 3 times in cases where rectal bougies and incisions of the stricture, had proved ineffectual in a treatment of years. Colotomy had been proposed, but B. was able to get an excellent result in each case. It is, however, granted that in these cases resection is a somewhat dangerous proceeding, on account of the coexisting inflammatory infiltration of the surrounding tissues, since traction may give rise to fatal hemorrhage, as happened in another of B.'s cases.

3. *Carcinoma of the Rectum* —This forms by far the most frequent indication for resection. Carcinomata of the rectum, generally, form adhesions with the prostate gland before reaching the bladder; the latter organ, the ureters, and the peritoneum being simply raised by the tumor and consequently easily detached from it during operation. If, therefore, the prostate is freely movable without the tumor, one may expect to find no adhesions with the bladder, etc.; but then only firm adhesions to the pelvic walls are an absolute counter-indication to resection. Unfortunately, the diagnosis of carcinoma is generally not a

very difficult one, as the disease is pretty far advanced when medical advice is sought. It is, therefore, of paramount importance in all cases of rectal trouble, even if no other symptoms than constipation with occasional diarrhea prevail, to make a thorough digital exploration. It is occasionally difficult to distinguish between carcinoma and stricture from infiltration and ulceration. In the latter instance the narrowing is generally more pronounced. the path of the stricture straight and not tortuous as in carcinoma, nor interrupted by knotty protuberances. There are, furthermore, wanting deep ulcerations in tissues that break down under the finger, and the general condition of the patient does not warrant the diagnosis of carcinoma. Although resection and amputation are universally acknowledged operations in Germany, B. would even extend the domain of rectal surgery beyond the limits generally set down by German surgeons, and only demands a certain mobility of the entire tumor-mass, even if the neoplasm has invaded the surrounding tissues or is situated high up in the sigmoid flexure. B. has resected 20 to 40 cmtr. of gut. The favourable prognosis after successful removal of cancer of the rectum is an established fact, and B. from his statistics believes that the mortality from the operation can eventually be reduced to 5%, barring complicated cases in which, for instance, the bladder has been opened. The great dangers of the operation are shock and sepsis. It is therefore incumbent on us to prevent any unnecessary loss of blood, to operate as quickly as possible, to secure efficient drainage, and to avoid gangrene of the lower end of the colon, which now and then results from the tension caused by the union of the divided ends of the bowel. The methods of amputation and resection as advocated by B. contain many original points, and being based on a large personal experience ought to command the attention of all who venture on such operations. The patient is prepared in the usual way with laxatives and antiseptic enemata. The operation is performed in the breech-back position, with the buttocks slightly elevated.

An incision is made through the skin and the superficial fascia, from the posterior border of the anus to the middle of the os sacrum and the soft parts are detached from the posterior aspect of this bone.

The lesser and greater sacro-sciatic ligaments are severed, and the os sacrum transversely divided at about the third sacral vertebra. This allows the entire hand to be introduced into the pelvis. The left index finger is now introduced into the rectum, until the tumour is reached, and the posterior wall of the gut is pressed against the primary incision. This is said to be a very important aid in now cutting down upon the posterior wall of the rectum, and makes this part of the operation almost bloodless. Both indexes are then thrust into the wound, which is widened by tearing apart the tissue in the median line towards the anus as well as the os sacrum. The left index is now reintroduced into the rectum, and the right being guided by the left, detaches all the tissues on the inner aspect of the levator ani muscle, around that part of the rectum situated immediately below the tumor. A loop having been passed around the isolated portion of the rectum and some traction being exerted, the tumor itself is separated from its surroundings in a similar manner; first on its posterior, and then on its anterior aspect, where in many instances the peritoneum can be detached without opening its cavity. Should the latter become a necessity, the cavity is plugged with thymol-gauze, the rectum drawn down and the operation quickly ended. The bowel is divided 4 ctmtr. from the upper border of the tumour, and 2 ctmtr. from the lower, and finally united by two running sutures, one including the mucous and the other the serous and muscular coats. The wound is filled with iodoform gauze. If the tumour is located near the prostate gland, the primary incision must be carried as far forward as the scrotum, severing the sphincters; the rectal wall is now divided transversely, from the inside below the tumor, and the operation continued as in the first instance. Amputation is, in its main features, carried out alike, after circumcising the anus and continuing the incision posteriorly to the os sacrum. Here, occasionally, so much of the rectum is removed that it becomes a risky proceeding to pull down the stump of the colon to the anal orifice on account of the great tension which is sometimes, as previously stated, followed by gangrene of the gut. In these cases B. advises to suture the colon to the fundus of the bladder. To whom B.'s operations still seem to lack surgical intrepidity a propo-

sal of B. for carcinoma of the sigmoid flexure, not to be reached from an incision at the outlet of the pelvis, will undoubtedly prove the contrary. It is to reach the seat of disease, extraperitoneally, from an incision above the symphysis pubis, to disengage the tumour from the surrounding tissues and then to resect the affected parts, which can now be well drawn down from the perineum. In the interest of the operation, as well as the patient, it is to be hoped that the practical verification of this proposal will be attempted by B. himself. The methods of resection and amputation, as advocated by B., can certainly claim many advantages over those formerly practised, and it is fortunate that the large personal experience of the author allows him to describe them in so precise and therefore faith-inspiring manner. As simple as, for instance, the tearing of the tissues, when once proposed and experimentally proved in vivo, now appears to us, we must not forget that by this simple handiness operations of this nature can be performed with but a few ligatures and, at least by B., in 15 or 20 minutes—agreeable news to those who have tasted the bitterness of an extirpation of the rectum with scalpel and scissors, and who have sometimes laboured for hours over the completion of the same. With the favourable prognosis of recurrence and the moderate inconvenience caused by the absence of the sphincter muscles in those cases, in which tumors have invaded the anal portion of the rectum, it is to be hoped that the domain of direct operative interference with the rectum, in preference to colotomy, will be much extended, with the necessary surgical discretion.

2. After quite an interesting brief historical sketch of the various phases, through which our knowledge of tuberculosis has passed during the last centuries, and after calling attention to the fact that medical superstitions among the laity are nothing else than the images of theories, which have been rife in science years before and have, perhaps,long since been overthrown by the exact methods of scientific investigation,through the influence of the late advances in natural sciences, Schuchardt recognises in Koch's discovery of the tubercle baccillus a new era in the history of tuberculosis in general, and of tuberculous fistulæ in ano in particular. But, at the same time, he points out that

v. Volkmann was the first to call attention to the tuberculous nature of certain anal fistulæ, even before the discovery of the bacillus, whereas now it is has become a simple task to diagnose the true nature of such affections, as the microscope will in every case reveal the presence of bacilli, even if only in small numbers and in few specimens. The tissue-structure, either miliary tuberculosis or tuberculous infiltration (giant and epithelioid cells) helps in the diagnosis, and when all the other methods of investigation have failed, inoculation into the anterior chamber of the rabbit's eye often guarantees a sure diagnosis. The morbid changes are, with few exceptions, located in the ischio-rectal space. There exists generally at the onset an internal rectal fistula, developing into a perianal abscess, which again opens in the perineum after many tortuous windings. There exists no tendency towards cicatrization, as in fistulæ with other etiology. Very seldom the abscess sets in with acute symptoms. An interesting case of the kind at the clinic at Halle is related, bearing upon the etiology of lupus, of a person suffering from tuberculous fistula, who developed lupus exfoliations in the immediate vicinity of the cicatrix after the operation of the same. Soon after the lupus had been successfuly removed one of the inguinal glands began to swell, which upon removal likewise proved tuberculous. There were no other symptoms of tuberculosis manifest. S. submits that the infection of the gland was due to the lupus, with seems rather plausible when we recollect that carcinomas of the rectum never cause secondary deposits in the inguinal glands, unless they have located in the anal portion of the rectum, or, at least, have developed towards the anus or the integuments around the same. In by far the greater number of cases S. believes that the virus has entered the cellular tissue through some lesion in the mucous membrane of the rectum, although the possibility of a tuberculous abscess developing in those localities without such a lesion is granted. As to the frequency of primary or secondary tuberculosis and fistula S. does not vouchsafe an opinion; it is, however, important to remember that even lupus, and more especially other varieties of localized tuberculosis, are, now and then, the expression of constitutional disturbance. Of course, S. is an energetic advocate of surgical

treatment, of cutting and scraping the fistulæ and removing the granulation tissues with forceps, scissors, scoop, whereupon the cavity is tamponed with iodoform gauze. In a postscriptum the author acknowledges the probable superiority of the operation recently recommended by American surgeons (Jenks, S. Smith and Lange) for simple fistula, but prefers his method in all tuberculous affections.

3. Esmarch's work starts with a very complete compilation of the immense literature on his subject. The latter itself is treated in 13 chapters, very conveniently arranged, and allowing an easy survey of the various forms of rectal ailment. E.'s style is well known not to be verbose, but it is fluent and everywhere to the point. In every chapter we find practical hints, which we might occasionally feel inclined to pass over rapidly, but which after a little consideration, we willingly attempt to commit to memory, because we feel assured that they are of practical value and may prove so to us hereafter. The first chapter is a concise description of the anatomy of the rectum. Among the anatomical data, perhaps not so familiar to all, are the existence of 5 to 8 membranous valves (columnæ recti Morgagni) at the upper end of the anal portion of the rectum, in which irregular bodies are occasionally caught and excite inflammation, the fact that the levator ani muscle is nothing more than a diaphragm of the pelvis, whose muscular action counteracts the pressure of the viscera on the pelvic floor; the varying location of the peritoneal folds in Douglas's pouch and the plica vesico-uterina, which accounts for the discrepancies in the statements of various authors (thus Malgaigne notes the average distance from anus to peritoneal folds to be in the male 6 to 8 ctmts., in the female 4 to 6 ctmts.; and Richet 10.8 and 16.2 ctmts., respectively, differences, not due to erroneous observation, but to the varying anatomical conditions; the direction of the current of the lymphatics around the anus towards the inguinal glands.)

Before an examination of the rectum is attempted, the same should be well washed out with warm water and the bladder completely emptied.

The examining finger should be well lubricated with some antiseptic ointment (borated or salicylated vaseline) and especial care should be

taken that there be no sores or abrasions on the finger, as syphilitic infection of the surgeon has occurred in this manner on several occasions, facilitated to some extent, no doubt, by the pressure of the sphincter muscles. It is, furthermore, advisable to make the examination under an anæsthetic, absolutely, when an introspection with Sims' or Simon's speculum is deemed important. When the entire hand is introduced into the rectum, this should be done with great caution and should be preceded, if necessary, by two incisions of about one-fourth of an inch on the anterior margin of the anus.

Ten schemata introduced into the text of the third chapter more ably demonstrate the congenital deformities of the rectum than much writing could do. E. divides them into 4 categories: atresia ani, atresia ani et recti, atresia recti, and cloaca congenita, when the rectum empties into the bladder, urethra, vagina at varying distances from their respective orifices (communication of the rectum with the uterus is a very rare pathological condition). The symptoms of absolute retention of the fæces are first inflation of the bowels with consecutive impediment to respiration. Soon the signs of carbonic acid poisoning supervene. Vomiting is set up, at the beginning only of the ingesta, but later on of meconium, and death ensues from collapse. The surgical treatment of these cases must be taken in hand before collapse threatens, but not immediately after birth, as at that time the lower part of the intestine is not sufficiently dilated by meconium. In cases of atresia ani or ani et recti, the incision into the gut must be smaller than that into the skin, and in atresia recti the lower portion of the occluded rectum must be entirely dissected out, care being taken not to injure the sphincters, and then the upper portion disengaged from the surrounding tissues, is drawn down towards the anus and there fastened by sutures. When the bowel cannot be reached from the perineum an attempt must either be made to accomplish this by laparotomy, or colotomy must be resorted to, and here E. strongly recommends the inguinal variety. In all other forms of atresia, whether the rectum communicates with the urethra, bladder or even uterus, an attempt should always be made to disengage the end of the gut from its attachments and bring it down to its normal position, as

experience has shown that even colotomy will not prolong life very much, if these communications are not interrupted.

Lesions of the rectum are often inflicted by syringes and rectal bougies, and several cases of impulsion of fluids into the perirectal spaces and even the peritoneal cavity, are on record from mismanagement of this kind. Lesions of the rectum are generally due to a fall on some pointed object. Perforating gun-shot wounds are most always complicated by comminuted fractures of the pelvic bones and end fatally from pyæmia. In habitual constipation ruptures have been observed in the anal portion and even higher up through the entire rectal wall, complicated by prolapse of the intestines through the rent, the reposition of which most frequently proving impossible. The great dangers of rectal injuries are fæcal extravasation, hæmorrhage and venous thrombosis with consecutive phlebitis. Fæcal extravasation should at the onset be prevented by freely incising the sphincter. Hemorrhage is frequently diagnosed only when collapse comes on, and then a thorough examination of the rectum of the anæsthetized patient should be immediately instituted, the bleeding points sought and ligatured. E. does not rely on rectal compressors.

Under the head of foreign bodies in the rectum a very interesting statistical résumé is given of celebrated cases of this catagory. E. believes fæcal impactions, forming around gall-stones, masses of hair, coins, and occasionally covered by layers of chalk and magnesia, to be most frequent in women. He tells us of many cases in his own experience, that had been treated for hypochondria, neurasthenia, phthisis, asthma, etc., which he has definitely cured by the prolonged use of purgatives, continued for many weeks. It is important to remember that foreign bodies in the rectum, occasionally, excite violent antiperistaltic movements, which drive them upward as far as the cæcum.

Those of large size can be broken up by introducing one finger along their anterior surface and compressing them against the sacrum, or even by the use of the forceps, but glass or earthenware objects ought never to be treated in this way, as many fatal cases of laceration of the rectum after such proceeding are recorded. With an an-

æsthetic and some patience even the largest bodies can be removed from the rectum in their entirety.

Next, inflammatory affections of the integuments around the anus, of the cavum ischio-rectale and the rectum itself are discussed. In pruritus ani E. with Allingham deprecates the use of opiates and recommends bromides and chloral. In all inflammatory affections a supine position affords much relief, as it tends to lessen the venous stasis in all inflamed parts. In chronic cases we often find a callous degeneration as the result of the infiltration and hypertrophic changes going on in the rectal walls, leading to stenosis, as in the urethra, and such cases, with periproctitis of many years standing, have not infrequently been erroneously diagnosed as incurable cancer. If any abscesses ought to be incised at an early stage, this must certainly be said of those of the ischio rectal cavity, because the superficial perineal fascia affords a strong barrier against their spontaneous perforation towards the external integuments.

Ulcerations of the rectum are the result of various inflammatory conditions, and are classed as traumatic, perforating, follicular, tuberculous, dysenteric and venereal (chancroids and syphilitic) ulcers. Under the head of perforating ulcers are gathered those for which there is no apparent etiology, either clinically or pathologically. Tuberculous ulcers develop from miliary tuberculous eruptions, which coalese and undergo fatty and caseous degeneration. They form ulcerations of various depth with ragged, undermined edges, spreading in a circular direction and often encompassfng the entire rectum. When they perforate the walls of the rectum they give rise to chronic abscesses and fistulæ.Recollecting, however, that internal fistulæ seldom communicate with the rectum otherwise than by a small opening in the mucous membrane, which it is occasionally even impossible to detect, Schuchardt's statement that they rarely develop from typical tuberculous ulcers in the rectum of phthisical patients seems very favorable to us. When the anus is the seat of such ulcers, defecation is generally very painful. Chancroid ulcers in women must generally be explained by an infection from ulcers of the same variety in the vulva,whereas in men they are the result of passive pederasty. They form irregularly defined

and flat ulcers with clean cut edges and are partially covered by a grayish-brown eschar. They have a great tendency to spread (phagedenic variety) and cause extended destruction of the rectal tissues, ending in death of the patient, if not resolutely treated, always leaving almost intractable strictures and fistulæ.

The primary, indurated, the condylomatous and the gummy are the varieties of syphilitic ulcer. E. claims that the gummy ulcer occurs more frequently than is generally admitted. In such cases the morbid process starts in the lower part of the rectum, immediately above the sphincters, and spreads upwards, so that the most recent pathological products are always met with in the upper parts of the rectum. At the outset we notice small, dark nodules, the size of a pea, projecting in the mucous membrane, and containing a brownish, gelatinous fluid. An ulceration, in due time, forms at the apex of these nodules, which spreading and meeting others, gradually destroys a great part of the mucous membrane. The intact patches then often hypertrophy into polypus growths, the syphilitic polypus, a granuloma (Virchow), not to be confounded histologically with other polypi. A correct diagnosis of the nature of the ulceration ought always to be made, if possible, with the assistance of the entire surgical apparatus at our disposal, but it must be borne in mind, in this connection, that in the advanced stages the several diseases present very similar pathological conditions, and that the most expert pathologist will sometimes be at a loss to determine which etiological factor has been at work. In the treatment of gummy ulcers of large dimensions, the iodide of potassium is generally unavailable, as it brings on gastric and intestinal catarrh, inunctions of mercury and injections of weak solutions of bichloride into the rectum are advocated as the best plan of treatment.

Strictures of the rectum are the results of inflammatory or ulcerative processes. The pathological condition is either an inflammatory infiltration and thickening of the intestinal walls or the unavoidable secondary contraction of cicatricial tissue in the walls, or the adjoining perirectal cavities. The etiology is, for the greater part, dysentery or syphilis. Congenital strictures are cases of incomplete atresia ani or recti, and Kohlrausch tells us that they are formed by folds of

mucous membrane containing no muscular fibres. Very rarely, indeed, the circular fibres of the muscular coat of the rectum enter into the formation of strictures, which are then called spasmodic, can only be reached by the examining finger in a standing posture of the patient, and are readily amenable to treatment with bougies. Strictures from cicatricial contraction are generally circular, very tight, and of most varying length. In strictures due to inflammatory infiltration of the submucous tissue, we generally find the mucous and muscular coats intact, or the former is in a state of chronic catarrh. At the ends of the stricture in such cases there is frequently developed a circular tumefaction of greyish appearance, due to hypertrophy of the tubular glands, which emits a whitish fluid on pressure. This must not be mistaken for medullary cancer, although is questionable if cancer might not develop therefrom.

Among the symptoms of stricture constipation is one of the first, now and then relieved by the evacuation of liquid masses of pus and mucus, which have gathered above the stricture where the morbid processes are still going on. and which is often considered diarrhœa.

The elongated shape of the fæces is the only characteristic of stricture of the anus.

Symptoms of pyrexia profuse, bloody and purulent discharges, violent bearing-down pains in the loins and the back, irritation of the bladder and testicles are rare. In high stricture examination with the bougie becomes indispensable, but care must be exercised in the conclusions arrived at. The diagnosis can only be upheld, when the instrument always enters the stricture at the same distance from the anus, and on attempting to withdraw it some resistance must be felt, as a sign that the stricture has been at all penetrated, Treves in a recent publication in the *Lancet* speaks of the long tube not only as a delusion, but even as a snare, and regards it as valueless as a diagnostic agent.

Tumors of the abdominal viscera, which compress the intestine and simulate stricture must be excluded by careful examination. The treatment of stricture can only be a mechanical one by gradual dilatation, or in severe cases by incision. It seems immaterial whether

wooden, glass or metal bougies are used, but forcible dilatation is always to be avoided, as very often causing severe irritation and even perforation and always much unnecessary affliction. As soon as the extremity of the dilating instrument has been introduced into the strictured part, everything to be desired for the moment has been accomplished, as when, after much labour, we have succeeded in sounding a narrow stricture of the urethra. Gradual dilatation, a larger number being introduced at each sitting, which may be repeated every two or three days, will generally achieve greater success than more violent measures. If incisions are necessary, as a preparatory act to dilatation, E. prefers multiple superficial incisions to those, which, while dividing the stricture, often cut through the entire wall of the rectum with disastrous consequences.

In strictures of the anus plastic operations are preferable to dilatation, which seldom guarantees a permanent cure.

Fistulous canals in ano are surrounded by dense cicatricial tissue, and at the beginning they are lined with granulations, which in course of time, are changed into a smooth surface, not unlike a mucous membrane. The ducts, as a rule, perforate the sphincter muscles rarely opening into the rectum above them, and very seldom into the anus below them. The internal opening is scarcely ever more than two inches above the anal orifice. The treatment of fistula in ano is very liberally considered. We are informed that even in the seventeenth century it was customary to excise, not only the entire fistulous canal, but also the surrounding indurated tissue and part of the rectum, and that these formidable operations generally sealed the fate of the patient by pyæmia or hemorrhage. For Louis XIV the "bistouri royal" was constructed by one of his eminent surgeons and tried on a goodly number of his subjects before his magesty submitted himself to its use with a favorable issue, but not before Cob in 1765 demonstrated the effectiveness of a simple incision were the disease and its curative attempts divested of their horrors. Esmarch uses for his cutttng operations a grooved tin sound, which is very pliable and the ends of whlch form two different sized probes. To discover the internal opening E. recommends the injection of milk into the canal from the external orifice combined with the use of Fergu-

son's speculum, when the liquid will be seen to spurt out in a stream. If the internal opening lies high up in the rectum a second grooved probe is introduced into the anus to meet the one passing through the fistulous canal before cutting. In cases where even a small loss of blood is to be avoided the galvano caustic loop or elastic ligature are practicable. If during the operation the sphincter muscles are divided in several places permanent incontinence of the fæces will sometimes follow, and a partial incompetence of these muscles has even followed a single incision.

From this point of view excision of the fistulous tracks and suture of the wound surfaces have been recommended by Jenks and Lange in this country, and there is no reason apparent why the continuous catgut suture should not give as favorable results in these cases, if all diseased tissues are removed, as in plastic operations on the perineum. Although Jenks published his method in 1884, we do not find the same mentioned in the work under consideration. In persons afflicted with pulmonary tuberculosis it is certainly proper to abstain from operative interference unless the fistulæ cause great annoyance.

About fissures we learn that they are more frequent in women than in men, are generally situated posteriorly, and when, multiple always of syphilitic origin. The beneficial effect of cauterization in these cases is ascribed to the formation of an aschar, which protects the highly sensitive wound-surface from further mechanical insults by the fæces passing, thus allaying pain, and further preventing reflex contractions of the sphincter, levator ani and perineal muscles. Incisions, where cauterization proves ineffectual, until the fibres of the sphincter muscles are distinctly recognizable, seems preferable to forcible dilatation, which ought to be resorted, to as an *ultimum refugium* only.

Prolapse of the rectum ordinarily begins with a prolapse of the anus, gradually pulling down the upper parts of the rectum. Predisposing factors are a laxity of the perirectal cellular and muscular tissues, and in children the flat shape of the os sacrum. Violent straining, coughing, and impeded micturition in children, the subjects of phymosis or stone of the bladder, are direct causes. Douglas's pouch is always drawn down with the prolapse and occasionally the intestines,

filling the pouch, become incarcerated, a condition not to be mistaken for simple incarceration of the prolapsed rectum. If vomiting, persistent constipation with rectal tenesmus, and a bulging out of the anterior half of the prolapse are present, our suspicions ought to be aroused. In the treatment of prolapse, if mechanical measures fail, E. recommends cauterization of the mucous membrane with concentrated nitric acid, reposition of the prolapse and introduction of a rubber tube into the rectum to be retained by adhesive plaster until the fourth day, when it is expelled during defecation. In severe cases the following operation is proposed by E., even if during the same the peritoneal cavity is opened: A wooden bougie with a circular groove is introduced into the prolapse until the groove has almost reached the anus, Over this constriction is then made with an elastic band, after the prolapsed rectum has been made bloodless by Esmarch's bandage. The rectum is amputated at a distance of about one inch from the elastic band, all the vessels are ligatured, and the peritoneum carefully closed with catgut. Upon removal of the elastic band all further bleeding points are secured, and the remaining coats of the rectum are also sutured; the bougie is removed and supplanted by a rectal tube. Incarcerated rectal herniæ are for the greater part reducible without operative interference. The chapter closes with a description of the methods for narrowing the anal orifice and the treatment of invagination of the rectum by the introduction of the entire hand into the anus, or if this should fail, by laparotomy.

Hemorrhoids and tumors are treated in the last two chapters. When several members of the same family have suffered from hemorrhoids, E. thinks that some influencing peculiarities in the mode of living have been transmitted from parent to offspring, rather than a direct hereditary disposition. On the treatment of hemorrhoids after a thorough exposition of the methods of ligation, cauterization and ablation of these tumors, we confess to some astonishment at the following paragraph: "In America Parley some years ago recommended the injection of a few drops of concentrated carbolic acid into these tumors, a method also very frequently used by quacks and recommended as quick, painless and effective. Closer investigation has proved this procedure to

be very painful, unreliable and dangerous, and it is therefore absolutely to be condemned." E. himself has abandoned the use of the cautery and now extirpates hemorrhoidal tumors with the scissors, carefully ligating all bleeding points and uniting the wound-surface with several catgut stitches. The last chapter on tumors of the rectum is full of excellent wood-cuts, macro- and microscopical, which tend so much to facilitate the understanding of the text. We note that cancer of the epithelial variety is by far the most common, scirrhus and encephaloid cancer being very rare. Two interesting cases of melanotic sarcoma from E's own practice are related, with ultimate permanent recovery after operation.

To avoid errors in the diagnosis of rectal tumors, which have no doubt frequently been confounded with chronic inflammatory processes with induration of the surrounding tissues, E. recommends excision, or, if practicable, the removal with the point of the finger of a part of the tissue for microscopical observation. And here again E. urges the importance of a digital exploration of the rectum, and relates the case of several of his own patients that had previously been sent to Carlsbad, Kissingen and other springs, for hemorrhoids, only because the inconvenience of an examination with the finger had prevented a correct diagnosis. The latter must, however, be conducted with the utmost caution as cases of fatal peritonitis have been known to follow the same, and we remember a mishap of this nature in a patient, who died on the second day after digital exploration by several competent surgeons. It is certainly, therefore, not a useless precaution to defer a minute investigation, as to the size and limits of the tumour, until the patient is anæsthetized for operation, which can then immediately follow. Inguinal colotomy is reserved only for such cases, which either on account of extreme debility do not warrant prolonged operative measures, or in which the tumor has perforated the walls of the intestine and formed extensive adhesions with the surrounding tissues.

Some of the wood-cuts and colored plates in the first have been omitted in this second edition, and the latter are no more interspersed throughout the text, but affixed to the end of the volume. They represent, with few exceptions, cases from E's own practice, and great

praise is due both to the author for their judicious selection, as well as the artists for their excellent execution of the same.

FRED KAMMERER.

THE DISINFECTION OF THE PHYSICIAN'S HANDS, WITH OBSERVATIONS ON THE BACTERIOLOGICAL CHARACTER OF THE ACCUMULATIONS UNDER THE FINGER-NAILS.[1]

Of the many brochures which have in late years appeared, and which treat of the theme of the disinfection of the hands of the physician, two are worthy of especial notice. These papers were written by Kümmel 1885-6. This author attempted to find a means by which the hands could be freed from micro organisms, irrespective of the question of their innocuousness or their dangerous characters. The separation of micro-organisms into pathogenic and non-pathogenic so far as the above question of disinfection is concerned, is still only of theoretical value. The practical side is still to free the fingers of all varieties of germs. Kümmel found that the disinfection of the hands is by far a more difficult task than the disinfection of instruments and other septic utensils. The fissures and rhagades in the hands make the task a very laborious one. Kümmel's process of washing each hand carefully with very warm water and potash soap and brush, and the combination therewith of a 5% solution of carbolic acid, makes this a very irritating method to some delicate hands. After the above disinfecting method the fingers were carried into nutritive gelatin, and if no colonies of micro-organisms appeared after a few days the hands were considered aseptic. Forster, of Amsterdam, and his pupil Wassing, have proceeded in a similiar manner. Forster found that the disinfection of the hands *a la* Koch was no easy matter. The methods in vogue in practice to free the hands of germs did not, according to Forster, accomplish this object. Forster found that a one or one-half pro mille solution of sublimate gave the best results in disinfecting the hands, while Kümmel found these useless, and the most satisfying so-

[1]Untersuchungen und Vorschriften über die Desinfection der Hände des Arztes nebst Bermerkungen über den bakteriologischen Charakter des Nagelschurutzes von Prof. P. Furbringer, Director am Berliner Krankenhaus Friedrichshain.